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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,546	12/02/2004	Han Leng Paxton Tan	SG 020011	5711
65913	7590	07/08/2009		
NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER HU, RUI MENG	
			ART UNIT 2618	PAPER NUMBER
			NOTIFICATION DATE 07/08/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No. 10/516,546	Applicant(s) TAN, HAN LENG PAXTON	
	Examiner RuiMeng Hu	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Response to Amendment

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 2 and 4-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites "scanning the receiver frequency band until a FM signal is received that has a signal strength greater than a FM threshold and that is in an automatic frequency control window associated with a valid FM station; immediately after receiving said FM signal, testing whether the FM signal meets criteria", however no support is found for this limitation. According to the specification paragraph 13 and the sole figure, a received FM signal e.g. at LO=87.5+10.7MHz (figure, block 1) is inputted to steps 2-9 to be tested whether or not the FM signal meets criteria; however the specification and the figure fail to mention before putting the FM signal into the test

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(steps 2-9), the FM signal has a signal strength greater than a FM threshold and that is in an AFC window associated with a valid FM station.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites "*counting means for registering*, within an interval immediately after receiving said FM signal, *a number of times* within a predetermined number of times that said FM signal meets both of the criteria", according to the specification paragraph 0013 and the sole figure, counting means may have 0 or 1 count that said FM signal meets both of the criteria, it is clear that 0 or 1 count is not in line with "a number of times", thus the limitation is uncertain.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. **Claims 1-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kennedy et al. (US Patent 5125105)** in view of **Tanaka et al. (US Patent 5870666)**, **Ichikawa (US Patent 4903328)** and **Moers (US Patent 6957053)**.

Consider **claim 1**, Kennedy et al. disclose method of auto-tuning a radio FM-receiver (abstract, column 2 line 61-column 3 line 21, column 4 lines 9-27, column 5 lines 14-22, figures 3 and 4) having a receiver frequency band, the method comprising: scanning the receiver frequency band (FM band) unit until a FM signal is received that has a signal strength greater than a FM threshold and that is in an automatic frequency control window associated with a valid FM station (figure 3, column 4 lines 9-27); the received FM signal is tested once in each of the criteria 31, 32 and 33, including checking whether the signal strength of the FM signal is greater than the FM threshold (figure 4, detector 47), when the signal strength of the FM signal is greater than the FM threshold, checking whether the FM signal is in the AFC window (figure 4, detector 48), and accepting the received FM signal only if all the criteria 31, 32 and 33 are met (column 4 lines 9-27, column 5 lines 14-22, figures 3 and 4).

However Kennedy et al. fail to disclose wherein immediately after receiving said FM signal, testing the FM signal a predetermined number of times, and storing information denoting a frequency of the FM signal when the count indicates that both of the criteria are met a majority of the predetermined number of times.

In the same field of endeavor, Tanaka et al. disclose a RF signal quality determination circuit, wherein RSSI of a received RF signal is continuously measured a predetermined M times, and the received signal is qualified in RSSI Estimation stage only if the criterion RSSI is met a majority of the times (column 3 line 63-column 4 line 12, figure 2, the test is repeated M (a predetermined integer) times, passed the test a majority of the times as $F < 0$).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Tanaka et al. into the art of Kennedy et al. as to measure the received FM signal a predetermined M times and accepting the signal only if all the criteria 31, 32 and 33 are met a majority of the times for better assurance.

However Kennedy et al. fail to disclose incrementing a count when the FM signal is in the AFC window.

In the same field of endeavor, Ichikawa disclose a FM receiver, for automatically selecting a valid channel comprising incrementing a count when the FM signal is in the AFC window (column 2 lines 11-19, testing a received channel three times, if at least two of three counting operations are in the AFC window (column 1 lines 65-68), it is then judged that the broadcasting signal is present).

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Ichikawa into the art of Kennedy et al. as to measure the received FM signal a predetermined M times and accepting the signal only if all the criteria 31, 32 and 33 are met a majority of the times for better assurance.

However, Kennedy et al. fail to disclose storing information denoting a frequency of the FM signal. This teaching is well known in the art.

In the same field of endeavor, Moers discloses a method of auto-tuning a radio FM-receiver (abstract) by scanning the receiver frequency band (column 4 lines 23-41) until a FM signal is received meeting criteria (column 4 line 66-column 5 line 5) for identifying the signal as being of a predetermined quality (predetermined threshold level qt), particularly coming from a valid FM station (column 4 lines 23-41), and storing information denoting a frequency of the FM signal (figure 3 step a11, column 4 lines 23-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Moers into the art of Kennedy et al. as to store the qualified FM channel for faster tuning in the future.

Consider **claim 2, as applied to claim 1**, Kennedy et al. as modified disclose wherein the predetermined number of times is 10 and the information denoting the frequency of the FM signal is stored when the count is at least 8 (In the case of M=10, passes at least 6 times as $F \leq -2 < 0$; passes at least 8 times as $F \leq -6 < -4$, thus

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replacing $F < 0$ with $F < -4$ is a design choice and proper as to increase threshold of confidence level).

Consider **claim 3**, Kennedy et al. disclose an auto tuning device (abstract, column 2 line 61-column 3 line 21, column 4 lines 9-27, column 5 lines 14-22, figures 3 and 4) comprising: means for registering whether or not a FM signal, received in a radio FM receiver (the FM signal is accepted only if all the criteria 31, 32 and 33 are met), meets criteria for identifying the FM signal as being of a predetermined quality and being within an automatic frequency control window associated with a valid FM station (column 4 lines 9-27), wherein the received FM signal is tested once in each of the criteria 31, 32 and 33, and accepting the received FM signal only if all the criteria 31, 32 and 33 are met (column 4 lines 9-27, column 5 lines 14-22, figures 3 and 4).

However Kennedy et al. fail to disclose counting means for registering within an interval immediately after receiving said FM signal, a number of times within a predetermined number of times that said FM signal meets the criteria, and means for storing information denoting a frequency of the FM signal only if the criteria are met a majority of the predetermined number of times.

In the same field of endeavor, Tanaka et al. disclose a RF signal quality determination circuit, wherein RSSI of a received RF signal is continuously measured a predetermined M times, and the received signal is qualified in RSSI Estimation stage only if the criterion RSSI is met a majority of the times (column 3 line 63-column 4 line 12, figure 2, the test is repeated M (a predetermined integer) times, passed the test a majority of the times as $F < 0$).

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Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Tanaka et al. into the art of Kennedy et al. as to measure the received FM signal a predetermined M times and accepting the signal only if all the criteria 31, 32 and 33 are met a majority of the times for better assurance.

However Kennedy et al. fail to disclose measuring a predetermined number of times of the FM signal is in the AFC window.

In the same field of endeavor, Ichikawa disclose a FM receiver, for automatically selecting a valid channel comprising incrementing a count when the FM signal is in the AFC window (column 2 lines 11-19, testing a received channel three times, if at least two of three counting operations are in the AFC window (column 1 lines 65-68), it is then judged that the broadcasting signal is present).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Ichikawa into the art of Kennedy et al. as to measure the received FM signal a predetermined M times and accepting the signal only if all the criteria 31, 32 and 33 are met a majority of the times for better assurance.

However, Kennedy et al. fail to disclose storing information denoting a frequency of the FM signal. This teaching is well known in the art.

In the same field of endeavor, Moers discloses a method of auto-tuning a radio FM-receiver (abstract) by scanning the receiver frequency band (column 4 lines 23-41) until a FM signal is received meeting criteria (column 4 line 66-column 5 line 5) for

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identifying the signal as being of a predetermined quality (predetermined threshold level qt), particularly coming from a valid FM station (column 4 lines 23-41), and storing information denoting a frequency of the FM signal (figure 3 step a11, column 4 lines 23-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection technique taught by Moers into the art of Kennedy et al. as to store the qualified FM channel for faster tuning in the future.

Consider **claim 4, as applied to claim 1**, Kennedy et al. as modified disclose wherein scanning the receiver frequency band includes scanning a frequency range from 87.5 to 108.5 MHz (FM band of USA, column 1 lines 48-55 of Ichikawa).

Consider **claim 5, as applied to claim 1**, Kennedy et al. as modified disclose wherein scanning the receiver frequency band includes sweeping a local oscillator (LO) signal in a range from 98.2 to 119.2 MHz in steps of 50 kHz (column 7 lines 14-17 of Ichikawa, 50KHz interval in a range from 98.2 to 119.2MHz when available).

Consider **claim 6, as applied to claim 5**, Kennedy et al. as modified disclose further comprising performing the testing step the predetermined number of times for each LO sweep and, at the beginning of each LO sweep, resetting the count to zero (figure 2 of Ichikawa, 100KHz in step throughout the FM band).

Consider **claim 7, as applied to claim 6**, Kennedy et al. as modified disclose wherein the predetermined number of times is 10 and, for each LO sweep, storing information denoting the frequency of the FM signal when the count is at least 8 (figure

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2 of Ichikawa, 100KHz in step throughout the FM band, consider reading the channel signal 10 times, it is a design choice and proper as to increase threshold of confidence level).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street

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Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/RuiMeng Hu/
R.H./rh
June 29, 2009

/Lana N. Le/
Primary Examiner, Art Unit 2614